

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F21-R-45

Name: Tisdale Dam

County: Meade

Legal description: Sec. 28, T3N, R12E

Location from nearest town: 10 mi E, 6 mi N, 1.5 mi W, and 1 mi NW of New Underwood

Dates of present survey: June 6, 2012

Date last surveyed: June 27, 2008

Management classification: Warmwater semi-permanent

Primary Species: (game and forage)

1. Largemouth Bass
2. Bluegill
3.

Secondary and other species:

1. Yellow Perch
2. Northern Pike
3.

PHYSICAL CHARACTERISTICS

Surface Area: 20 acres

Watershed: 6,175 acres

Maximum depth: 15 feet

Mean depth: 10 feet

Lake elevation at survey (from known benchmark): 3 feet below full pool

Ownership of lake and adjacent lakeshore property:

Tisdale Dam is owned by the South Dakota Department of Game, Fish and Parks (SDGF&P) and is a Game Production Area. Entry to the lake is limited and requires driving across privately owned rangeland.

Fishing Access:

A lack of emergent vegetation around much of the shoreline allows for easy access for shore angling. However, there is a large amount of submergent vegetation which may make casting lures difficult during the summer months. It is possible to launch a small boat or wade into the pond for better fishing access.

Observations of Water Quality and Aquatic Vegetation:

Summer months are often characterized as having large amounts of submergent vegetation. Cattle grazing and sedimentation is the only pollution problem known at the lake.

Observations on condition of structures (i.e. spillway, level regulators, boat ramps, etc.):

The dam and dam grade are deteriorating and in need of repair. There was a boat ramp available in the past, but it has since become buried and vegetation has grown over it. It appears that small boats are still being launched at that point.

MANAGEMENT OBJECTIVES

- Objective 1.** Provide a Largemouth Bass fishery as water levels allow.
- Objective 2.** Provide a panfish fishery as water levels allow.

BIOLOGICAL DATA

Sampling Effort and Catch

A fisheries survey was conducted on Tisdale Dam on June 6, 2012. The net survey consisted of four modified fyke (trap) nets consisting of a 1.3 X 1.5 m frame, 19.1 mm (0.75 in) mesh and a 1.2 X 23 m (3.9 X 75.5 ft) lead, one experimental gill net (45.7 m [150 ft] long and 1.8 m [6 ft] deep with six 7.6 m [25 ft] panels of bar mesh sizes: 12.7 mm [0.5 in], 19.1 mm [0.75 in], mm [1.25 in], 38.1 mm [1.5 in], and 50.8 mm [2.0 in]), two quarter arc seine hauls, and 2.5 angler hours (Figure 1). It was difficult to complete seine hauls on Tisdale Dam due to the dense submergent vegetation.

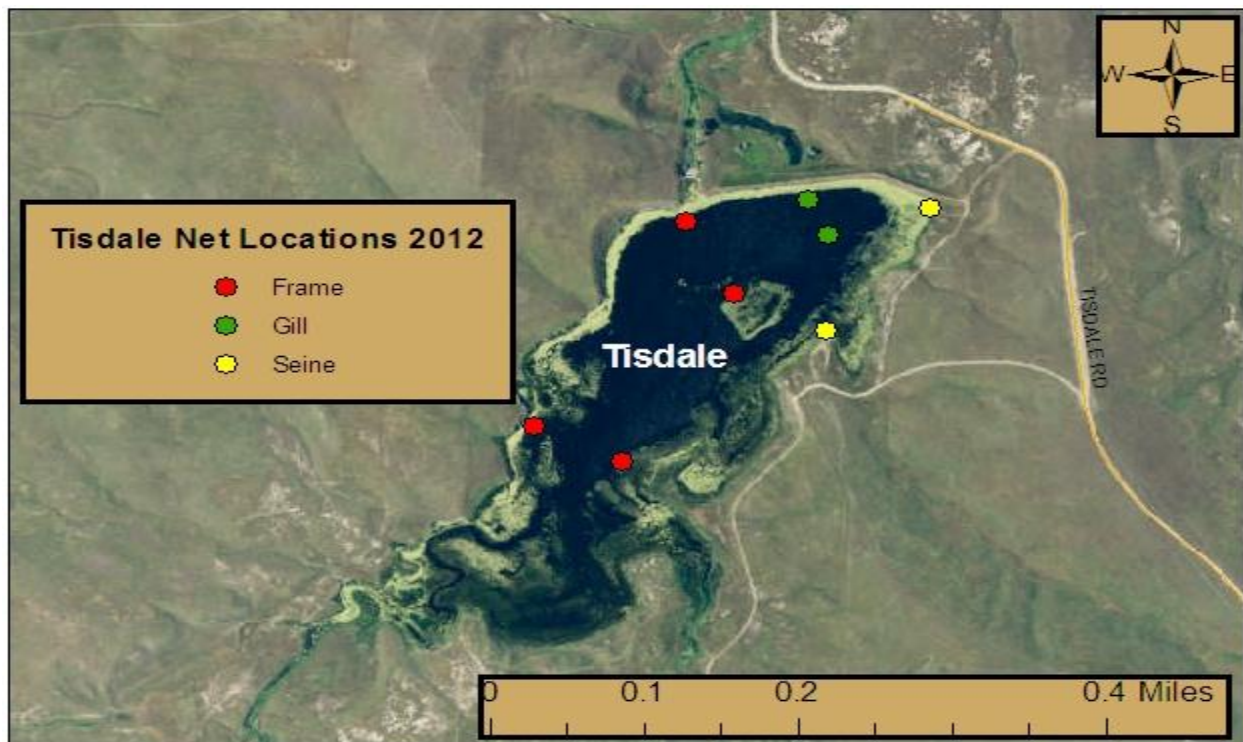


Figure 1. Locations of experimental gill (gill) and modified fyke (frame) nets used during the fisheries survey in Tisdale Dam, Meade County, South Dakota, 2012.

Table 1. Species, catch per unit effort (CPUE), catch per net night of stock-length fish (CPUE-S), proportional stock density (PSD) and proportional stock density of preferred size fish (PSD-P) and relative weight of stock length or greater fish ($Wr \geq S$) from all species collected in modified fyke nets in Tisdale Dam, Meade County, South Dakota, 2012. CPUE values with 80% confidence intervals in parentheses. PSD, PSD-P and $Wr \geq S$ values with 90% confidence intervals in parentheses.

Species	CPUE	CPUE-S	PSD	PSD-P	$Wr \geq S$
Bluegill	87 (72.1)	87 (72.1)	38 (5)	14 (3)	108.9 (1.5)
Largemouth Bass	2 (1.9)	1 (0.9)	0	0	113.6 (47.2)
Northern Pike	0.25 (0.41)	0.25 (0.41)	0	0	82.4 (--)
Yellow Perch	1.75 (1.9)	1.75 (1.9)	43 (49)	0	79.2 (4.1)

Table 2. Species, catch per unit effort (CPUE), catch per net night of stock-length fish (CPUE-S), proportional stock density (PSD) and proportional stock density of preferred size fish (PSD-P) and relative weight of stock length or greater fish ($Wr \geq S$) from all species collected in an experimental gill net in Tisdale Dam, Meade County, South Dakota, 2012. CPUE values with 80% confidence intervals in parentheses. PSD, PSD-P and $Wr \geq S$ values with 90% confidence intervals in parentheses.

Species	CPUE	CPUE-S	PSD	PSD-P	$Wr \geq S$
Bluegill	2 (--)	2 (--)	100	0	117 (13.5)
Northern Pike	5 (--)	5 (--)	80 (20)	20 (56)	108.5 (20.8)
Yellow Perch	7 (--)	7 (--)	43 (49)	0	82.1 (5.7)

Bluegill

A total of 348 bluegills were collected during the 2012 survey. Several year classes appear to present in the system (Figure 2). Trap net proportional stock density (PSD) and proportional stock density of preferred-length fish (PSD-P) for Bluegill in Tisdale Dam were 38 and 14, respectively, while PSD and PSD-P for Bluegill captured in the gill net was 100 and 0, respectively (Table 1). Mean relative weight for stock length and great fish ($Wr \geq S$) of Bluegill in Tisdale was 108.9 and 117 for trap and the gill net, respectively (Table 2).

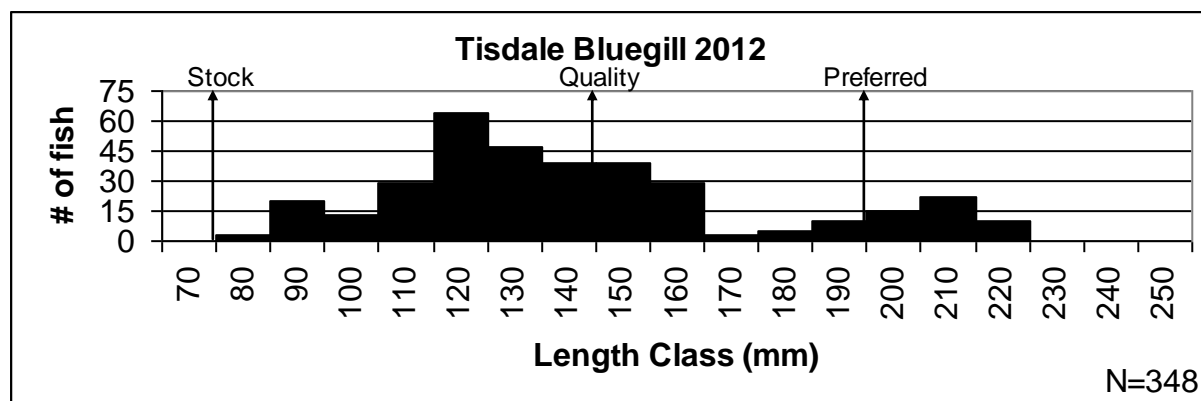


Figure 2. Length frequency histogram of Bluegill collected from the modified fyke net survey in Tisdale Reservoir, Meade County, South Dakota, 2012.

Largemouth Bass

During the angling survey, 11 Largemouth Bass were collected in 1.5 hours (7.3 LMB/Anger Hour). Scale samples indicate that the Largemouth Bass collected were ages 2 and 3. It is possible that the age-2 fish are the progeny of Largemouth Bass fingerlings stocked in 2008, although though no age-4 individuals were collected. The age-3 fish caught may be those stocked in 2009. The age-2 fish ranged from 168 mm to 198 mm (6.6 in to 7.8 in) and the age-3 fish from 196 to 283 mm (7.7 in to 11.1 in). Mean $W_r \geq S$ surveyed by angling ranged from 97 to 101. Growth may be slow with the largemouth bass in Tisdale as one of the age-3 fish was not yet stock-length yet. Largemouth bass were collected in the trap nets as well (Table 1).

Other Species

Northern Pike were collected in gill net and in the trap nets (Table 1 and 2). Northern Pike fry and adults were stocked into Tisdale in 2011. The largest Northern Pike in the gill net was 723 mm and 2,647 g (28.5 in and 5.8 lbs) and the smallest was 476 mm and 684 g (18.7 in and 1.5 lbs). Yellow Perch were also found in the gill net and the trap nets (Table 1 and 2). Yellow Perch had been stocked into Tisdale Dam in the spring of 2012.

RECOMMENDATIONS

1. Continue to monitor the Largemouth Bass and Northern Pike population.
2. Continue stocking efforts as needed to restore the fishery after periods of drought or winter die-offs.
3. Survey panfish populations every five years or as needed to evaluate the fishery.

APPENDIX

Appendix A. Stocking history, including year, species, size and number of fish stocked into Tisdale Dam, Meade County, South Dakota, 2008-2012.

Year	Species	Size	# of Fish
2008	Largemouth Bass	Fingerling	2,000
2008	Bluegill	Fingerling	10,000
2008	Fathead Minnow	Large	3,000
2009	Largemouth Bass	Catchable	3,000
2011	Northern Pike	Fry	20,000
2012	Yellow Perch	Adult	423
2012	Golden Shiner	Adult	100